Inscription Canyon Ranch Wastewater Treatment Plant
Aquifer Protection Permit No. P-103119
Place ID 70, LTF No. 81954
Significant Amendment

I. Introduction:

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an Aquifer Protection Permit (APP) for the subject facility that covers the life of the facility, including operational, closure, and post-closure periods unless suspended or revoked pursuant to Arizona Administrative Code (A.A.C.) R18-9-A213. The requirements contained in this permit will allow the permittee to comply with the two key requirements of the Aquifer Protection Program: 1) meet Aquifer Water Quality Standards (AWQS) at the Point of Compliance (POC); and 2) demonstrate Best Available Demonstrated Control Technology (BADCT). BADCT's purpose is to employ engineering controls, processes, operating methods or other alternatives, including site-specific characteristics (i.e., the local subsurface geology), to reduce discharge of pollutants to the greatest degree achievable before they reach the aquifer or to prevent pollutants from reaching the aquifer.

II. Permittee & Facility Location:

The facility is located 14000 Gray Bear Trail, in Prescott, in Yavapai County, Arizona.

Permittee:

Inscription Canyon Ranch Sanitary District
PO Box 2344
Prescott, Arizona 86302

III. Facility Description:

The permittee is allowed to operate Inscription Canyon Wastewater Treatment Plant (WWTP) with a capacity to treat a maximum average monthly flow of 0.09 million gallons per day (mgd) (90,000 gallons per day (gpd)) upon modification of the WWTP. The Existing WWTP is rated at 0.0625 mgd (62,500 gpd).

Existing WWTP: The Existing WWTP is rated at 0.0625 mgd and consists of two equalization tanks, one anoxic tank, four aeration tanks, a reaeration tank, a clarifier, a chlorination tank and effluent pump station. The sludge is stored in sludge handling tank and then dewatered in Geo-membrane tubes (Geo Tubes). The Geo Tubes are placed in an existing impoundment for dewatering. Once Geo Tubes are full and sludge is dewatered, the tubes are hauled off-site for disposal in accordance with state and federal regulations. The supernatant (fluid remaining above the solid residue) from the Geo-Tubes is collected and pumped to the equalization tank. The existing impoundment is lined with 16-inch clay liner. This existing impoundment was not permitted in the previous permit to store Geo-membrane Tubes.

Upgraded WWTP: The Upgraded WWTP will have a capacity to treat 0.09 mgd of flow. The Existing WWTP train will be upgraded by converting sludge handling tank to an anoxic tank, adding a reaeration tank, a clarifier tank, adding more diffusers to aeration tanks and a sludge holding tank. The Upgraded WWTP train consists of two equalization tanks, two anoxic tanks,

four aeration tanks, two reaeration tanks, two clarifiers, an existing chlorination tank, and existing effluent pump station. The sludge will be stored in a new sludge holding tank and then dewatered in Geo Tubes. The Geo Tubes will be stored on a new concrete sludge drying pad for dewatering of sludge. The supernatant from the Geo Tubes will be collected and pump to the equalization tank. Once Geo Tubes are full and sludge is dewatered, the tubes will be hauled off-site for disposal in accordance with state and federal regulations. Upon construction on of a new concrete sludge drying pad, the facility is required to close existing impoundment as required in the Compliance Schedule Item #3.

The WWTP is designed to produce reclaimed water meeting Class B+ Reclaimed Water Standards (A.A.C. R18-11, Article 3). Effluent is stored in lined storage ponds at the reuse site and reused for beneficial purposes under a Recycled Water Permit #R105241 per A.A.C. R18-9, Article 7.

IV. Amendment Description:

The purpose of this amendment is to allow the operator to upgrade the WWTP. Specifically:

- Remove the reference of Phase I and Phase II Membrane Bioreactor (MBR) plant from the permit as the facility decided not to construct the MBR plant.
- Increase the design flow for the WWTP from 0.0625 mgd to 0.09 mgd to meet the future growth demand in the service area.
- Add a new reaeration tank, a clarifier tank, a sludge holding tank and additional diffusers to the existing aeration tank and to convert existing sludge handling tank to an anoxic tank to accommodate the increase in the design flow.
- Allow the use of an existing clay lined impoundment to store and dewater the Geo-membrane tubes. This existing impoundment was not permitted to store Geo-membrane tubes. Once the facility constructs the new concrete pad to store these Geo-membrane tubes, the facility will close this impoundment per the Compliance Schedule Item #3 in the permit.
- Construct a concrete pad to store the sludge dewatering Geo-membrane tubes.

The permit category for this amendment was determined to be a 'Significant Amendment' per A.A.C. R18-9-A211(B)(2)(b) and (9) because it allows more than a ten percent of increase in the design flow and for addition of discharging facility.

V. Regulatory Status

- This significant amendment application was received on April 6, 2020.

VI. Best Available Demonstrated Control Technology (BADCT):

The Existing and Upgraded WWTP shall be designed, constructed, operated, and maintained to meet the treatment performance criteria for new facilities as specified in A.A.C. R18-9-B204.

The treatment facility shall not exceed a maximum seepage rate of 550 gallons per day per acre for all containment structures within the treatment works.

The facility shall meet the requirements for pretreatment by conducting monitoring as per R18-9-B204(B)(6)(b)(iii).

VII. Compliance with Aquifer Water Quality Standards (AWQS):

To ensure that site operations do not result in violation of Aquifer Water Quality Standards at the POC, representative samples of the effluent will be collected from the effluent pump station and will be monitored daily for fecal coliform, monthly for total nitrogen, quarterly for metals, semi-annually for volatile and semi-volatile organic compounds.

To ensure that site operations do not result in violation of Reclaimed Water Standards for the beneficial use of Class B+ reclaimed water, representative samples of the reclaimed water will be collected from the effluent pump station and will be monitored daily for fecal coliform, and monthly for total nitrogen.